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10/654,771	09/04/2003	Walter Clark Milliken	SVIPGP085	7545
92045 The Caldwell I	7590 01/13/201 Firm LLC	EXAMINER		
PO Box 59655 Dept. SVIPGP Dallas. TX 75229			CHANG, JULIAN	
			ART UNIT	PAPER NUMBER
			2452	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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MILLIKEN ET AL. 10/654,771 Office Action Summary Examiner Art Unit

Application No.

Applicant(s)

	JULIAN CHANG	2452				
The MAILING DATE of this communication appears on the cover sheet with the correspondence address Period for Reply						
A SHORTENED STATUTORY PERIOD FOR REPLY WHICHEVER IS LONGER, FROM THE MAILING D. A Extension of time may be available under the provisions of 37 CPR 1.13 after SIX (6) MONTHS from the mailing date of this communication. 1 IN Operator to regive is generated advove, the maximum statutory period we have a subject to the subject of the su	ATE OF THIS COMMUNICATION 16(a). In no event, however, may a reply be tin till apply and will expire SIX (6) MONTHS from cause the application to become ABANDONE	N. nely filed the mailing date of this o D (35 U.S.C. § 133).				
Status						
N Responsive to communication(s) filed on 22 December 2a) ☐ This action is FINAL. Since this application is in condition for allowan closed in accordance with the practice under E	action is non-final. ace except for formal matters, pro		e merits is			
Disposition of Claims						
4) ⊠ Claim(s) 1-30 and 67-133 is/are pending in the 4a) Of the above claim(s) is/are withdraw 5) □ Claim(s) is/are allowed. 6) ☒ Claim(s) 1-17.1,9-30 and 67-133 is/are rejected 7) ☒ Claim(s) 12 is/are objected to. 8) □ Claim(s) are subject to restriction and/or	vn from consideration.					
Application Papers						
9) The specification is objected to by the Examiner 10) The drawing(s) filed on is/are: a) acce Applicant may not request that any objection to the c Replacement drawing sheet(s) including the correct 11) The oath or declaration is objected to by the Examiner.	epted or b) objected to by the I drawing(s) be held in abeyance. See on is required if the drawing(s) is obj	e 37 CFR 1.85(a). jected to. See 37 C				
Priority under 35 U.S.C. § 119						
12) Acknowledgment is made of a claim for foreign a) All b) Some * c) None of: 1. Certified copies of the priority documents 2. Certified copies of the priority documents 3. Copies of the certified copies of the prior application from the International Bureau * See the attached detailed Office action for a list of	s have been received. s have been received in Applicati ity documents have been received (PCT Rule 17.2(a)).	on No ed in this National	Stage			
Attachment(s)						
1) Notice of References Cited (PTO-892)	4) Interview Summary	(PTO-413)				

Attachment(s)	
1) Notice of References Cited (PTO-892)	4) Interview Summary (PTO-413)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date.
3) Information Disclosure Statement(s) (PTO/SB/08)	 Notice of Informal Patent Application
Paper No(s)/Mail Date	6) U Other:

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DETAILED ACTION

 This Office action is responsive to communication filed on 12/22/10. Claims 1-30, and 67-133 are pending. Claims 1-17, 19-30, and 67-133 are rejected.

Information Disclosure Statement

The information disclosure statement filed 10/06/10 fails to comply with 37
 CFR 1.97(d) because it lacks a statement as specified in 37 CFR 1.97(e). It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 101

- 35 U.S.C. 101 reads as follows:
 - Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.
- Claims 70-133 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.
- 5. Claims 70-101 are drawn to a "computer program product embodied on a tangible computer readable medium". The specification is silent regarding the meaning of the term "tangible computer readable medium". Thus, applying the broadest reasonable interpretation in light of the specification and taking into account the meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art (MPEP § 2111), the claim as a whole covers both transitory and non-transitory media. A computer program product is considered to be functional

descriptive material, which is statutory only if recorded on non-transitory computerreadable medium. MPEP 2106.01.

Claim Rejections - 35 USC § 103

- The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
- Claims 1-3, 5, 11-15, 17, 22-26, 28, 67-72, 74, 80-84, 86, 91-95, 97, 99-104, 106, 107, 112-116, 118, 123-127, 129, and 131-133 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,460,050 ("Pace"), and further in view of U.S. Pub. No. 2002/0199095 ("Bandini"), U.S. Pub. No. 2004/0221062 ("Starbuck"), and U.S. Pub. No. 2003/0120647 ("Aiken").
- 8. Bandini, Starbuck and Aiken are intervening references. After reviewing applicant's priority documents, it has been determined that the priority documents do not support the relevant claim limitations with a sufficient date to overcome the intervening references.
- Regarding claims 1, 70, and 102, Pace teaches a method, a computer program product implementing said method, and a system implementing said method, said method comprising:

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receiving a plurality of e-mail messages (Fig. 2, Col. 3, lines 32-58); and generating hash values, as generated hash values, based a plurality of portions of each message body of the plurality of e-mail messages ('digital ID...may be..multiple hashes', 'hash may be of...portions of the body', Col. 4, lines 1-14).

Pace fails to teach counting a number of the generated hash values corresponding to the message body associated with one of the plurality of e-mail messages that match the hash values corresponding to the message body associated with prior e-mail messages; and utilizing a settable score-related threshold, determining that one of the plurality of e-mail messages is a potentially unwanted e-mail message, the determination being based, at least in part, on the number of generated hash values corresponding to the message body associated with one of the e-mail messages that match the hash values corresponding to the message body associated with the prior email messages.

Bandini teaches keeping a running comparison score ('running comparison score', ¶ [0023]) of the generated hash values corresponding to the message body ('hash computation result based on the message body, or portions of the message body', ¶ [0025]) associated with one of the plurality of e-mail messages that match the hash values corresponding to the message body associated with prior e-mail messages (¶ [0038]); and utilizing a settable score-related threshold (¶ [0021]), determining that one of the plurality of e-mail messages is a potentially unwanted e-mail message, the determination being based, at least in part, on the number of generated hash values corresponding to the message body associated with one of the e-mail messages that

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match the hash values corresponding to the message body associated with the prior email messages (Fig. 3). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to performing the steps of counting, and determining as taught by Bandini in order to effectively reduce the amount of SPAM received by a user.

Pace-Bandini fails to teach processing e-mail messages by removing HTML comments and HTML tags from the e-mail messages, and performing hashing based on the processed e-mail messages. Starbuck teaches processing e-mail messages by removing HTML comments and HTML tags from the e-mail messages, and performing hashing based on the processed e-mail messages (¶ [0007], [0009], [0048]). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to removing HTML from e-mail messages prior to hashing as taught by Starbuck in order to prevent HTML comments from circumventing SPAM filters.

Pace-Bandini-Starbuck fails to teach counting a number of hashes that match. Aiken teaches determining how well something matches based on whether the number of hashes that match exceed a threshold (¶ [0077]). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to determine how well something matches as taught by Aiken in order to efficiently provide better matches.

10. Regarding claim 2, 71, and 103, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 1, 70, and 102 above, including performing a plurality of hashes on a plurality of variable-sized blocks of a main text of the plurality of e-mail messages (Pace: 'all of the body or portions of the

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body', Col. 4, lines 1-14). Since the main texts of messages are not all the same length, the block (i.e., body) is variably-sized.

11. Regarding claim 3, 72, and 104, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 1, 70, and 102 above, including performing a plurality of hashes on a plurality of fixed-sized blocks of a subject line (Pace: 'some number of characters of the subject line', Col. 4, lines 1-14), but fails to teach doing so for fixed-sized blocks of the main text.

In KSR Int'l. Co. v. Teleflex Inc., the Court recognized that "if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill". 127 S.Ct 1727, 1740 (2007). In the instant case, one of ordinary skill would recognize that SPAM messages are modified slightly in order to avoid exact matching by SPAM filters. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to apply the technique taught in Pace to fixed-sized blocks of main text in order to make it harder for SPAM senders to circumvent SPAM filters

12. Regarding claim 5, 74, and 106, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 1, 70, and 102 above, including performing a plurality of hashes on a main text of the plurality of e-mail messages using a same hash function (Pace: 'MD5'. Col. 4, lines 1-14).

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13. Regarding claim 11, 80, and 112, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 1, 70, and 102 above, including comparing the generated hash values to hash values corresponding to known unwanted e-mails (Pace: Col. 6, lines 1-18).

- 14. Regarding claim 12, 81, and 113, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claim 11, 80, and 112 above, including that known unwanted e-mails include at least one of e-mails containing a virus, e-mails containing a worm, and unsolicited commercial e-mails (Pace: 'spam', Col. 6, lines 1-18).
- 15. Regarding claims 13, 82, and 114, Pace teaches the invention substantially as claimed and described in claims 1, 70, and 102 above, including hashing at least one of a main text and an attachment to generate one or more first hash values (Pace: 'all of the body or portions of the body', Col. 4, lines 1-14), and hashing a concatenation of first and second header fields to generate a second hash value (Pace: Col. 4, lines 1-14; Bandini: para. [0026]).
- Regarding claims 14, 83, and 115, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 13, 82, and 114 above, including a From header field and a To header field (Bandini: para. [0026]).

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17. Regarding claims 15, 84, and 116, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 13, 82, and 114 above, including generating a first and second suspicion count (Bandini: Fig. 3, step 66 compares various message attributes to data in database (i.e., previous hash values)).

- 18. Regarding claim 17, 86, and 118, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 1, 70, and 102 above, including taking remedial action when the one of the plurality of e-mail messages is a potentially unwanted e-mail message, the taking remedial action including at least one of: discarding the one of the plurality of e-mail messages, bouncing the one of the plurality of e-mail messages with a warning, subjecting the one of the plurality of e-mail messages to a virus or worm detection process, creating a notification message, and generating a suspicion score for the one of the plurality of e-mail messages to a virus or worm detection process of the one of the plurality of e-mail messages (Pace: 'subject line may be appended to indicate that the e-mail is "spam", Col. 5, lines 41-54).
- 19. Regarding claim 22, 91, and 123, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 1, 70, and 102 above, including comparing the generated hash values to known legitimate mailing lists; and passing the plurality of e-mail messages without further examination when the

generated hash values match one or more of the known legitimate mailing lists (Pace: 'exceptions', Col. 6, lines 18-34).

- 20. Regarding claim 23, 92, and 124, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claim 22, 91, and 123 above, including determining whether the plurality of e-mail messages originated from the known legitimate mailing lists (Pace: Col. 6, lines 18-34).
- 21. Regarding claims 24, 93, and 125, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 1, 70, and 102 above, including hashing a main text to generate a first hash value (Pace: 'all of the body or portions of the body', Col. 4, lines 1-14), and hashing sender-related header fields (Bandini: 'sender address', para. [0026]).
- 22. Regarding claims 25, 94, and 126, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 24, 93, and 125 above, including that a sender-related header fields include at least one of a From header field, a Sender header field, and a Reply-To header field (Bandini: para. [0026]).
- Regarding claims 26, 95, and 127, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 24, 93, and 125 above,

including generating a first and second suspicion count (Bandini: Fig. 3, step 66 compares various message attributes to data in database (i.e., previous hash values)).

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- 24. Regarding claim 28, 97, and 129, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 1, 70, and 102 above, including hashing a main text of the plurality of e-mail messages to generate a main text hash (Pace: 'all of the body or portions of the body', Col. 4, lines 1-14), and hashing at least one header field of the plurality of e-mail messages to generate at least one header hash (Pace: 'header', Col. 4, lines 1-14).
- 25. Regarding claims 67, 99, and 131, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 1, 70, and 102 above, including processing e-mail messages before generating hash values (Starbuck: ¶ [0009]).
- 26. Regarding claims 68, 100, and 132, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 1, 70, and 102 above, including processing e-mail messages in parallel with generating hash values (Starbuck: ¶ [0009], 'concurrently', ¶ [0025]).
- Regarding claims 69, 101, and 133, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 1, 70, and 102 above,

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including that the portions of each message body of the plurality of e-mail messages that have been processed includes blocks (Pace: 'portions of the body', Col. 4, lines 1-14).

- 28. Claims 4, 73, and 105 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pace-Bandini-Starbuck-Aiken as applied to claims 1, 70, and 102 above, and further in view of U.S. Pat. No. 6,169,969 ("Cohen").
- 29. Regarding claims 4, 73, and 105, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 1, 70, 102 above, but fails to teach performing a plurality of hashes on a main text of the plurality of e-mail messages using a plurality of different hash functions.

Cohen discloses employing multiple hash functions (Col. 2, lines 1-21) (describing Bloom). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to employ multiple hash functions as disclosed in Cohen in order to improve false alarm rates.

 Claims 6, 75, and 107 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pace-Bandini-Starbuck-Aiken as applied to claims 1, 70, and 102 above, and further in view of U.S. Pub. No. 2003/0167402 ("Stolfo"), and U.S. 2002/0152399 ("Smith").

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31. Stolfo and Smith are intervening references that qualify as prior art because the Office was unable to find in applicant's priority documents support for the claim limitations for which Stolfo and Smith are relied upon.

32. Regarding claims 6, 75, and 107, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 1, 70, and 102 above, but fails to teach performing hashes on attachments.

Stolfo teaches performing hashes on attachments ('MD5', para. [0045]). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to perform hashes on attachments as taught by Stolfo in order to detect malicious attachments.

Pace-Bandini-Starbuck-Aiken-Stolfo fails to teach attempting to decompress an attachment prior to hashing. Smith teaches decompressing an attachment prior to determining whether the attachment contains an exploit (Fig. 6; para. [0071]). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to decompress an attachment prior to scanning as taught by Smith in order to find hidden exploits in an attachment.

Claims 7, 8, 10, 76, 77, 79, 108, 109, and 111 are rejected under 35
 U.S.C. 103(a) as being unpatentable over Pace-Bandini-Starbuck-Aiken as applied to claims 1, 70, and 102 above, and further in view of Stolfo.

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34. Regarding claims 7, 76, and 108, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 1, 70, and 102 above, including performing a plurality of hashes on a plurality of variable-sized blocks of information (Pace: Col. 4, lines 1-14), but fails to teach performing hashes on attachments.

Stolfo teaches performing hashes on attachments (para. [0045]). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to perform hashes on attachments as taught by Stolfo in order to detect malicious attachments.

35. Regarding claims 8, 77, and 109, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 1, 70, and 102 above, including performing a plurality of hashes on a plurality of fixed-sized blocks of information (Pace: Col. 4, lines 1-14), but fails to teach performing hashes on attachments.

Stolfo teaches performing hashes on attachments (para. [0045]). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to perform hashes on attachments as taught by Stolfo in order to detect malicious attachments.

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36. Regarding claims 10, 79, and 111, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 1, 70 and 102 above, but fails to teach performing hashes on attachments.

Stolfo teaches performing hashes on attachments using a single hash function ('MD5', para. [0045]). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to perform hashes on attachments as taught by Stolfo in order to detect malicious attachments.

- 37. Claims 9, 78, and 110 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pace-Bandini-Starbuck-Aiken as applied to claims 1, 70 and 102 above, and further in view of Stolfo and Cohen.
- 38. Regarding claims 9, 78, and 110, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 1, 70, and 102 above, but fails to teach performing hashes on attachments.

Stolfo teaches performing hashes on attachments (para. [0045]). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to perform hashes on attachments as taught by Stolfo in order to detect malicious attachments.

Pace-Bandini-Starbuck-Aiken-Stolfo fails to teach performing a plurality of hashes using a plurality of different hash functions. Cohen discloses employing multiple hash functions (Col. 2, lines 1-21) (describing Bloom). It would have been obvious to

one of ordinary skill in the art at the time of applicant's invention to employ multiple hash functions as disclosed in Cohen in order to improve false alarm rates.

- Claims 16, 27, 85, 96, 117, and 128 are rejected under 35 U.S.C. 103(a) as
 being unpatentable over Pace-Bandini-Starbuck-Aiken as applied to claims 15, 26, 84,
 116, and 127 above, and further in view of U.S. Pat. No. 6,985,923 ("Bates").
- 40. Regarding claims 16, 27, 85, 96, 117, and 128, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 15, 26, 84, 95, 116, and 127 above, but fails to teach determining that an email message is potentially unwanted when the main text matches a substantially higher number of emails than the header hash. In other words, an email is unwanted when the same message is received from different addresses.

Bates teaches determining that a message is unwanted when the same message is received from different senders (Col. 1, lines 22-30). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to determine messages to be unwanted when the same message is received from different senders as taught by Bates in order to avoid duplicate messages.

41. Claims 19-21, 88-90, and 120-122 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pace-Bandini-Starbuck-Aiken as applied to claims 1, 70, and 102 above, and further in view of Schiavone.

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42. Regarding claims 19, 88, and 120, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 1, 70, and 102 above, but fails to teach generating and comparing hash values as a message is being received.

Schiavone teaches performing hashing in real-time as the message is being received (para. [0026]). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to perform hashing in real-time as taught by Schiavone in order to bouncing messages in real-time.

43. Regarding claims 20, 89, and 121, Pace-Bandini-Starbuck-Aiken-Schiavone teaches the invention substantially as claimed and described in claims 19, 88, and 120, including:

generating a suspicion score for the plurality of e-mail messages based on a result of the counting of the number of the generated hash values corresponding to the message body associated with the plurality of e-mail messages that match the hash values corresponding to the message body associated with prior e-mail messages (Bandini: Fig. 3; para. [0023]); and

taking remedial action when the suspicion score of an e-mail message of the plurality of e-mail messages is above a threshold (Bandini: Fig. 3; para. [0023]), the taking remedial action including rejecting the e-mail message (Bandini: Fig. 2, Step 60).

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- 44. Regarding claims 21, 90, and 120, Pace-Bandini-Starbuck-Aiken-Schiavone teaches the invention substantially as claimed and described in claims 20, 89, and 121, including that rejecting occurs before the e-mail message is completely received (Schiavone: para. [0026]).
- 45. Claims 29, 98, and 130 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pace-Bandini-Starbuck-Aiken as applied to claims 28, 97, and 129 above, and further in view of Bates.
- 46. Regarding claims 29, 98, and 130, Pace-Bandini-Starbuck-Aiken teaches the invention substantially as claimed and described in claims 28, 97, and 129 above, but fails to teach determining that an email message is potentially unwanted when the main text hash matches a substantially higher number of emails than the header hash. In other words, an email is unwanted when the same message is received from different addresses.

Bates teaches determining that a message is unwanted when the same message is received from different senders (Col. 1, lines 22-30). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to determine messages to be unwanted when the same message is received from different senders as taught by Bates in order to avoid duplicate messages.

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Allowable Subject Matter

47. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

48. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach deleting the e-mail with the highest suspicion score (e.g., most likely to be SPAM) when an incoming email exceeds a mail quota.

Response to Arguments

- 49. Applicant's arguments filed 12/22/10 have been fully considered but they are not persuasive.
 - a. Applicant argues that claims 70-101 comply are directed towards statutory subject matter. Remarks p. 24. Applicant cites ¶ [0035] in support. Id. Applicant's argument is not persuasive because the cited portion provides only examples of what a computer readable medium may be. It does not explicitly exclude transitory media from the term "computer-readable medium".
 - b. Applicant argues that Starbuck fails to teach that stripping HTML comments and tags occur in parallel to the generation of hash values. Remarks p. 29. Applicant's argument rests on the fact that Starbuck fails to teach generating hash values. Id. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking

references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). As shown above, Bandini teaches generating hash values. Starbuck teaches that the steps may be performed concurrently (i.e., in parallel). ¶ [0025]. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to perform the step of generating hash values as taught by Bandini in parallel with the steps of Starbuck.

 Applicant's remaining arguments are moot in view of the new ground(s) of rejection presented above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JULIAN CHANG whose telephone number is (571)272-8631. The examiner can normally be reached on Monday thru Friday 9AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thu Nguyen can be reached on (571) 272-6967. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. C./

Examiner, Art Unit 2452

/THU NGUYEN/ Supervisory Patent Examiner, Art Unit 2452